

**Amendments to the Claims**

The following listing of claims will replace all prior versions and listings of claims in the application:

**Listing of Claims:**

1-4280. (cancelled)

4281. (previously presented): A mixture produced from a coal formation, comprising:  
condensable hydrocarbons, wherein less than about 15 weight % of the condensable hydrocarbons have a carbon number greater than 25; and  
wherein the condensable hydrocarbons comprise oxygenated hydrocarbons, and wherein greater than about 5 % by weight of the condensable hydrocarbons comprise oxygenated hydrocarbons.

4282. (previously presented): The mixture of claim 4281, further comprising non-condensable hydrocarbons, wherein the non-condensable hydrocarbons comprise hydrocarbons having carbon numbers of less than 5, and wherein a weight ratio of hydrocarbons having carbon numbers from 2 through 4 to methane is greater than approximately 1.

4283. (original): The mixture of claim 4281, wherein the condensable hydrocarbons further comprise olefins, and wherein about 0.1 % by weight to about 15 % by weight of the condensable hydrocarbons are olefins.

4284. (original): The mixture of claim 4281, further comprising non-condensable hydrocarbons, wherein a molar ratio of ethene to ethane in the non-condensable hydrocarbons ranges from about 0.001 to about 0.15.

4285. (previously presented): The mixture of claim 4281, wherein the condensable hydrocarbons comprise nitrogen containing compounds, and wherein less than about 1 % by weight, when calculated on an atomic basis, of the condensable hydrocarbons is nitrogen.

4286. (previously presented): The mixture of claim 4281, wherein the condensable hydrocarbons comprise oxygen containing compounds, and wherein less than about 1 % by weight, when calculated on an atomic basis, of the condensable hydrocarbons is oxygen.

4287. (previously presented): The mixture of claim 4281, wherein the condensable hydrocarbons comprise sulfur containing compounds, and wherein less than about 1 % by weight, when calculated on an atomic basis, of the condensable hydrocarbons is sulfur.

4288. (previously presented): The mixture of claim 4281, wherein the oxygen containing compounds comprise phenols.

4289. (previously presented): The mixture of claim 4281, wherein the condensable hydrocarbons comprise aromatic compounds, and wherein greater than about 20 % by weight of the condensable hydrocarbons are aromatic compounds.

4290. (previously presented): The mixture of claim 4281, wherein the condensable hydrocarbons comprise multi-ring aromatics, and wherein less than about 5 % by weight of the condensable hydrocarbons comprises multi-ring aromatics with more than two rings.

4291. (previously presented): The mixture of claim 4281, wherein the condensable hydrocarbons comprise asphaltenes, and wherein less than about 0.3 % by weight of the condensable hydrocarbons are asphaltenes.

4292. (previously presented): The mixture of claim 4281, wherein the condensable hydrocarbons comprise cycloalkanes, and wherein about 5 % by weight to about 30 % by weight of the condensable hydrocarbons are cycloalkanes.

4293. (previously presented): The mixture of claim 4281, further comprising a non-condensable component, wherein the non-condensable component comprises hydrogen ( $H_2$ ), wherein the hydrogen is greater than about 10 % by volume at 25 °C and one atmosphere absolute pressure of the non-condensable component, and wherein the hydrogen is less than about 80 % by volume at 25 °C and one atmosphere absolute pressure of the non-condensable component.

4294. (original): The mixture of claim 4281, further comprising ammonia, and wherein greater than about 0.05 % by weight of the produced mixture is ammonia.

4295. (currently amended): The mixture of claim 4281, further comprising ammonia, and wherein at least a portion of the ammonia is used to produce fertilizer.

4296. (previously presented): The mixture of claim 4281, wherein the condensable hydrocarbons comprise olefins, and wherein less than about 10 % by weight of the condensable hydrocarbons comprises olefins.

4297. (previously presented): The mixture of claim 4281, wherein the condensable hydrocarbons comprise olefins, and wherein about 0.1 % to about 5 % by weight of the condensable hydrocarbons comprises olefins.

4298. (previously presented): The mixture of claim 4281, wherein the condensable hydrocarbons comprise olefins, and wherein about 0.1 % to about 2 % by weight of the condensable hydrocarbons comprises olefins.

4299. (previously presented): The mixture of claim 4281, wherein greater than about 5 % by weight of the oxygenated hydrocarbons comprise phenols.

4300. (previously presented): The mixture of claim 4281, further comprising a non-condensable component, wherein the non-condensable component comprises  $H_2$ , and wherein greater than about 5 % by weight of the non-condensable component comprises  $H_2$ .

4301. (previously presented): The mixture of claim 4281, further comprising a non-condensable component, wherein the non-condensable component comprises  $H_2$ , and wherein greater than about 15 % by weight of the non-condensable component comprises  $H_2$ .

4302. (previously presented): The mixture of claim 4281, wherein a weight ratio of hydrocarbons having greater than about 2 carbon atoms to methane is greater than about 0.3.

4303-5149. (cancelled)

5150. (previously presented): A mixture produced from a coal formation, comprising:  
condensable hydrocarbons, wherein less than about 15 weight % of the condensable hydrocarbons have a carbon number greater than 25;  
wherein greater than about 5 % by weight of the condensable hydrocarbons comprise oxygen containing hydrocarbons; and  
a non-condensable component.

5151. (previously presented): The mixture of claim 5150, wherein the condensable hydrocarbons comprise olefins, and wherein about 0.1 % by weight to about 15 % by weight of the condensable hydrocarbons are olefins.

5152. (previously presented): The mixture of claim 5150, wherein the oxygen containing hydrocarbons comprise phenols.

5153. (previously presented): The mixture of claim 5150, wherein the condensable hydrocarbons comprise aromatic compounds, and wherein greater than about 20 % by weight of the condensable hydrocarbons are aromatic compounds.

5154. (previously presented): The mixture of claim 5150, wherein the condensable hydrocarbons comprise multi-ring aromatics, and wherein less than about 5 % by weight of the condensable hydrocarbons comprises multi-ring aromatics with more than two rings.

5155. (previously presented): A mixture produced from a coal formation, comprising:  
condensable hydrocarbons, wherein less than about 15 weight % of the condensable hydrocarbons have a carbon number greater than 25;  
wherein greater than about 5 % by weight of the condensable hydrocarbons comprise oxygen containing hydrocarbons, and wherein greater than about 5 % by weight of the oxygen containing hydrocarbons comprise phenols; and  
a non-condensable component.

5156. (previously presented): The mixture of claim 5155, wherein the condensable hydrocarbons comprise nitrogen containing compounds, and wherein less than about 1 % by weight, when calculated on an atomic basis, of the condensable hydrocarbons is nitrogen.

5157. (previously presented): The mixture of claim 5155, wherein the condensable hydrocarbons comprise sulfur containing compounds, and wherein less than about 1 % by weight, when calculated on an atomic basis, of the condensable hydrocarbons is sulfur.

5158. (previously presented): The mixture of claim 5155, wherein less than about 15 weight % of the condensable hydrocarbons have a carbon number greater than 25.

5159. (previously presented): The mixture of claim 5155, further comprising ammonia, and wherein greater than about 0.05 % by weight of the mixture is ammonia.